

LedSync820H

LED HD Video Processor

USER'S MANUAL



TABLE OF CONTENTS

I. Safety precautions	3
II. Packing list	4
III. Connections of hardware	
1. Rear view	5
2. Port description	5
3. Connection diagram	6
IV. Frontal panel operations	
1. Diagram of frontal panel	7
2. Button instructions (operation mode)	8
V. Setup	
1. Enter setup of LedSync820H	12
2. Select language	12
3. Output image setup	13
4. Color / Sharpness	14
5. PIP setup	15
6. Audio configurations	18
7. Factory district setup	19
VI. Specifications	27
VII. Copyright info.....	42

I. Safety Precautions

Danger!

There is high voltage in the processor, to prevent any unexpected hazard, unless you are maintenance, please do not open the cover of the device.

Warning!

1. This device shall not encounter water sprinkle or splash, please do not place anything containing water on this device.
2. To prevent fire, keep this device far from any fire source.
3. If this device gives out any strange noise, smoke or smell, please immediately unplug the power cord from receptacle, and contact local dealer.
4. **Please do not plug or unplug DVI signal cable if the device is powered on.**

Caution!

1. Please thoroughly read this manual before using this device, and keep it well for future reference.
2. In the event of lighting or when you are not going to use the device for a long time, please pull the power plug out of receptacle.
3. Nobody other than professional technicians can operate the device, unless they have been appropriately trained or under guidance of technicians.
4. To prevent equipment damage or electric shock, please don't fill in anything in the vent of the device.
5. Do not place the device near any water source or anywhere damp.
6. Do not place the device near any radiator or anywhere under high temperature.
7. To prevent rupture or damage of power cords, please handle and keep them properly.
8. Please immediately unplug power cord and have the device repaired, when
 - 1) Liquid splashes to the device.
 - 2) The device is dropped down or cabinet is damaged.
 - 3) Obvious malpractice is found or performance degrades.

II. Packing list

Please unpack the product with care, then check whether all the following things are included in the package. If anything is found missing, please contact the dealer.

Standard accessories

The accessories supplied with this LED Video Processor may differ from the figures contained in the User's Manual, but they are applicable for the regions where you live.

User's Manual



Power cord (1.5m)1pcs



DVI cable (1.5m), 1pcs



User manual CD



USB cable (1.5m) BNC-RCA adapter, 2 pcs PCB Connector (Audio)



III. Connections of hardware

1. Rear view

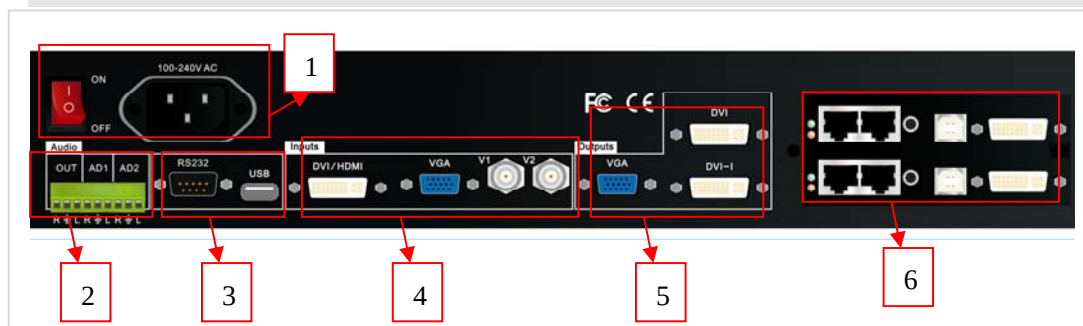


Figure 1

- ① AC power jack & on/off key ② Audio input and output ports
- ③ RS232/USB input ports ④ Signal input ports
- ⑤ VGA/DVI output ports ⑥ LED sending cards inside (optional)

2. Port description

1) Video Input

LedSync820H supports 4-channel signal input, including:

Port name	Description
V1, V2	2-channel PAL/NTSC composite video input
VGA	1-channel computer analog signal input
DVI/HDMI	1-channel DVI/ HDMI digital signal input

2) Audio Input

LedSync820H supports 3-channel stereo audio switch. among which, 1 channel is DVI/HDMI audio, the other 2 channels are AD1, AD2 external input audio. AD1 and AD2 can be mapped to anyone of the video inputs, and will be switched synchronous to the audio of corresponding video input signals.

3) Video Output

Port	Description
VGA OUT	1-channel analog RGBHV signal output, it can be connected to a local display device and used as monitor (it is strongly

	recommended to use this port when operating and setting LedSync820H).
DVI OUT1 / DVI OUT2	2 same DVI digital graphic signal output, it can be connected with external LED transmission card or LED transmission box

4) Audio Output (AUDIO OUT)

Corresponds to the selected video input signal, output this channel audio input signals.

5) Signals of other ports

RS232/USB input ports are used to connect PC. Then the Upper Controller can operate and control LedSync820H via these communication ports.

3. Connection diagram

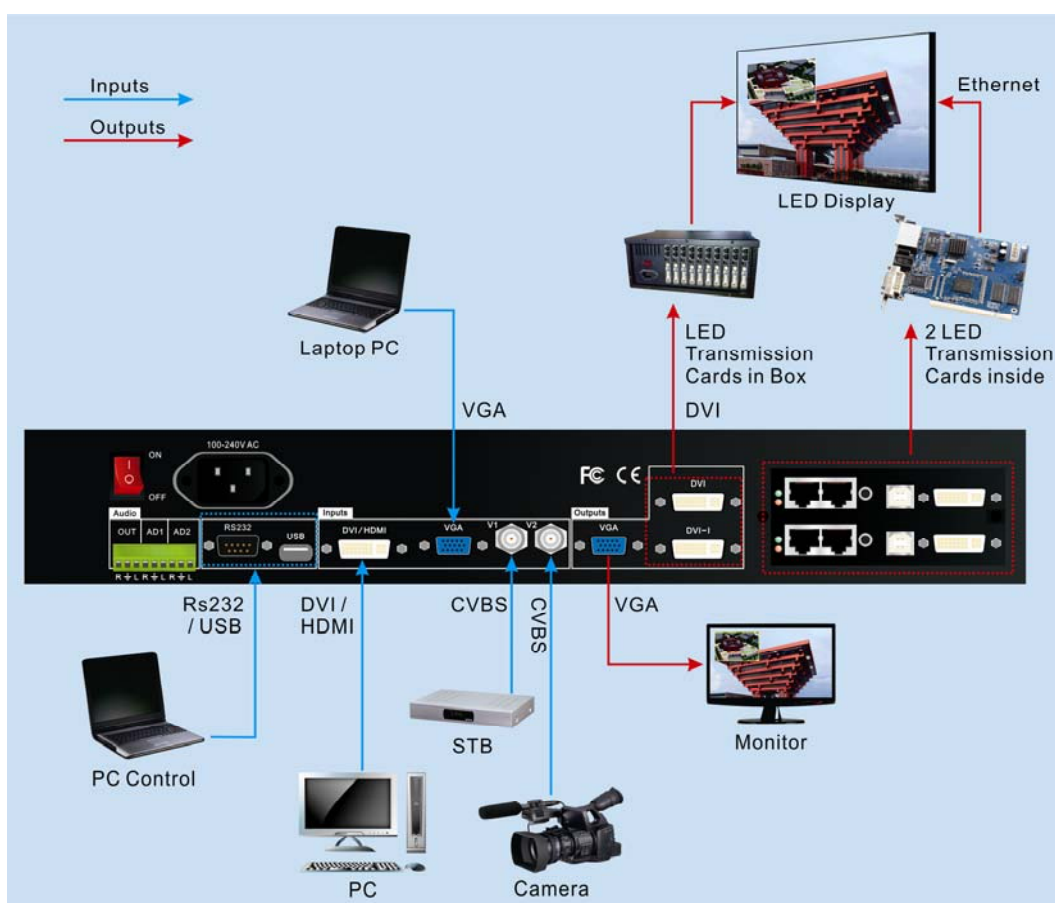


Figure 2

IV. Frontal panel operations

1. Diagram of frontal panel

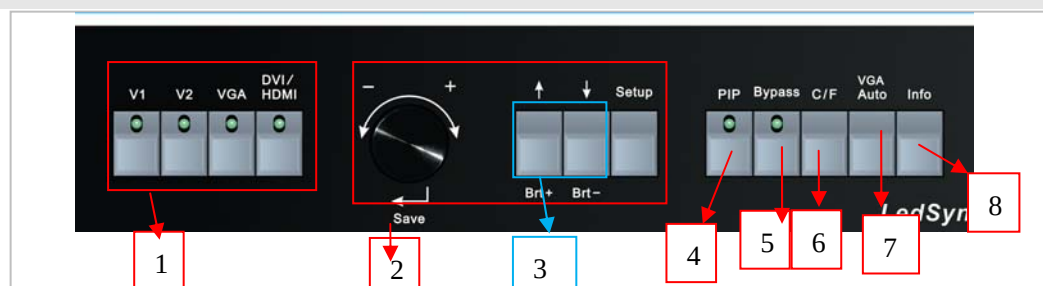


Figure 3

- 1) **Input selecting buttons (V1, V2, VGA, DVI):**
They are used to select input signals
- 2) **Setup buttons (Setup, knob, Save, ↑, ↓)**
They are used to set the image output parameters of the processor.
- 3) **Brightness adjustment (Brt+, Brt-)**
To adjust the output image brightness of the processor.
- 4) **PIP:**
To turn on/off **PIP** functions, when the indicator is on, you can select another signal or current signal as PIP by using input selecting buttons.
- 5) **PC signal bypass output (Bypass):**
It is used to switch full screen/partial screen display of PC signals, and the indicator will indicate the status of current input signal.
- 6) **Cut / Fade switching mode (C/F):**
It is used to select signal switching effects, including seamlessly switching (CUT), 0.5s, 1.0s and 1.5s Fade in / Fade out and blend.
- 7) **VGA auto adjustment (Auto)**
To automatically adjust VGA input signals
- 8) **Info:**
It is used to display current settings and information of processor

2. Button instructions (operation mode):

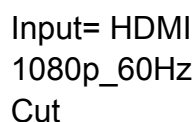
There are 12 buttons on the frontal panel of LedSync820H, all these buttons will be operable after start. they have the following functions as described below:

1) Select input video source

Port name	Description
V1、 V2	2-channel PAL/NTSC composite video input
VGA	1-channel computer analog signal input
DVI/HDMI	1-channel DVI/HDM digital signal input

Switch audio input while operating above buttons; select the audio signal input from corresponding video input to output it through **Audio OUT**.

After selecting input signals, the input signal source you currently selected such as “input=HDMI” will appear in the first line of LCD, while the status of current input signals will appear in the second line of LCD. If there are no valid signals entered, the message “no signal” will appear in LCD, and the corresponding indicator will blink and dark screen appear; if the signal is valid, the format of input signals such as “ 1080p_60Hz ” will appear in LCD.

A rectangular LCD screen with a blue border. It displays three lines of text: "Input= HDMI" on the first line, "1080p_60Hz" on the second line, and "Cut" on the third line.

Input= HDMI
1080p_60Hz
Cut

Figure 4

2) Brightness adjustment (Auto)

Button names	Description
Brt-	Decrease output image brightness of LedSync820H , the lowest brightness is 0.
Brt+	Increase output image brightness of LedSync820H , the highest brightness is 64.

LedSync820H supports 32 levels Brightness, “0” represents the lowest brightness, and 64 represents the highest brightness. To ensure full gray level of output image, normally the output brightness is set as 64!

3) VGA input auto adjustment (Auto)

When the current VGA input source of **LedSync820H** is a valid signal, press this button, **LedSync820H** will automatically adjust the sampling parameters of the VGA signals, so as to make VGA picture clean and complete.

In general, this operation is made only when new VGA signal source is to be connected in. Sometimes user need repetitively do

such adjustment till VGA picture looks clean, complete and stable.

4) Information display (Info)

Press this button to view current settings and information of **LedSync820H**, it consists of 21 items. If you press “Info” again before **LedSync820H** exit information display, **LedSync820H** will continue to display the next item of information.

5) Select Cut / Fade / Blend mode(C/F)

LedSync820H can realize seamless switching effect (Cut) , fading in/out switching effect (Fade) or blend effect between any two signals.

Cut (seamlessly switching): while in this mode, “Cut” will appear in the third line of LCD, the system can seamlessly switch between different signals.

Fade (fading in fading out): while in this mode, “Fade=1.0s” will appear in the third line of LCD, the system can realize fading in fading out switching effect between the signals. Users can set the switching time of fading in and fading out as 0.5 seconds,1.0 second or 1.5 seconds.

Blend: The current input signal will be the background. Another signal will be choosed as blend signal. Then the background signal and blend signal will be overlap showed. Then press the button of background or blend signal, the output will be the choosing signal. The whole procedure will be fade in fade out switching effect.

6) PIP

PIP/POP mode of LedSync820H allows user to insert a PIP window in current picture, and the size and location of the current signal and PIP window can be set freely. **The signals to be displayed in PIP window can be either current signal itself or any other signals.** Here we call current picture “**main picture**”, and call the picture to be overlaid “PIP”. The following paragraphs will illustrate the operating procedures of this function:

Enter PIP display mode: Press **PIP** button, its indicator will illuminate, LedSync820H will enter PIP display mode, then use button to select PIP input signals, in the meantime, signals of main picture and PIP and their locations will appear in LCD (see Figure below):

Main=V1
PAL
PIP=VGA
1280X1024 60Hz

Figure 5

Change PIP: While in PIP mode, use **select** button to select proper input signals, the signals will be set as PIP.

Change the main picture: you must first turn off PIP mode. Press buttons to select appropriate input signal as **main picture**, then enter PIP mode again, and select a new PIP picture.

7) Part/Full (Bypass)

Press this button to switch between Part / Full display mode.

This function is only available when the current input signal is PC (**VGA / DVI**) signal, while other signals can only be displayed in the Full display mode.

Mode	Description
Full	Full screen display. Entire picture is compressed to display in LED screen, the moment the indicator above the button is OFF.
Part	Part screen display. The picture will not be compressed, but partly exported to entire LED screen, the moment the indicator above the button is ON.

Caution: when the width and height of current input signals are less than the width or height of LED display (say the Out_Hori_width or Out_Vert_height), Part mode will not work.

V. Setup

The following settings must be made by relevant qualified technicians. For ordinary users, unless they have received adequate technical training, they shouldn't attempt to make the following settings!

There are 7 categories 23 items available for you to set in **LedSync820H**. Technicians can set these items as necessary, for details see the table below:

Category		Items	
1	Language	1	Language 语言
2	Output image setup	2	Out Format
		3	Out_Hori_Width
		4	Out_Hori_Start
		5	Out_Vert_Height
		6	Out_Vert_Start
3	Color /Definition setup	7	Saturation
		8	Sharpness
4	Audio configuration	9	Audio1 Config
		10	Audio2 Config
5	PIP setup	11	Main_Hori_Width
		12	Main_Hori_Start
		13	Main_Vert_Height
		14	Main_Vert_Start
		15	PIP_Hori_Width
		16	PIP_Hori_Start
		17	PIP_Vert_Height
		18	PIP_Vert_Start
6	Communication config	19	Control Method
7	Factory district setup	20	ADC Calibration
		21	Bias
		22	De interlace
		23	Device init

1. Enter Setup of LedSync820H

Enter setup: While in operation mode, press “**Setup**” button, then press the knob(“**Save**” key) , **LedSync820H** will enter No.1 setup item.

Exit setup: press “**Setup**” button while in setup mode, **LedSync820H** will directly exit setup.

After **LedSync820H** enters setup mode, the knobs and 3 buttons in setup area will respectively have the functions as described in table below:

Name		Functions
Knob	Speed of knob	The step value in proportion to the speed of knob
	Turn it anticlockwise	Decrease value or select previous value
	Turn it	Increase value or select next value

	clockwise	
	Press it	Save the adjustment or selected values
↑		Move to previous item
↓		Move to next item
Setup		Enter or exit setup mode

After **LedSync820H** enters setup mode, the relevant setting information will be displayed in LCD as per the layout shown in the figure below:

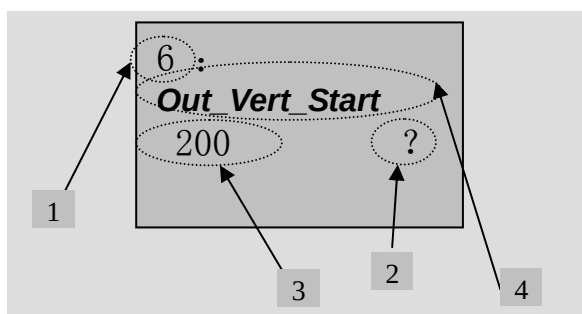


Figure 6

As shown in above figure, LCD consists of five sectors:

Sector	Description
1	The No. of current setting item
2	? : ask you whether to save the adjustment; ! : The adjustment already be saved and takes effect.
3	Newly adjusted value
4	Name of current setting item

2. Select language

Item 1: “**Language** 语言 ”

After entering setting mode, **LedSync820H** will enter the first setting item “**Language** 语言 ”. **LedSync820H** supports Chinese and English display, turn the knob to select either of them, then press the knob to save it and make it valid.

3. Output image setup

LedSync820H outputs images from VGA and two DVI output ports. There are 9 output formats as listed in the table below. User can enter the No.2 setting item “**Out Format**” to select one of them.

	Format
1	1024×768_60
2	1024×768_75
3	1280×1024_60
4	1280×1024_75
5	1600×1200_60
6	1920×1080_50
7	1920×1080_60
8	1366×768_60
9	1440×900_60

Item 2: “**Out Format**”

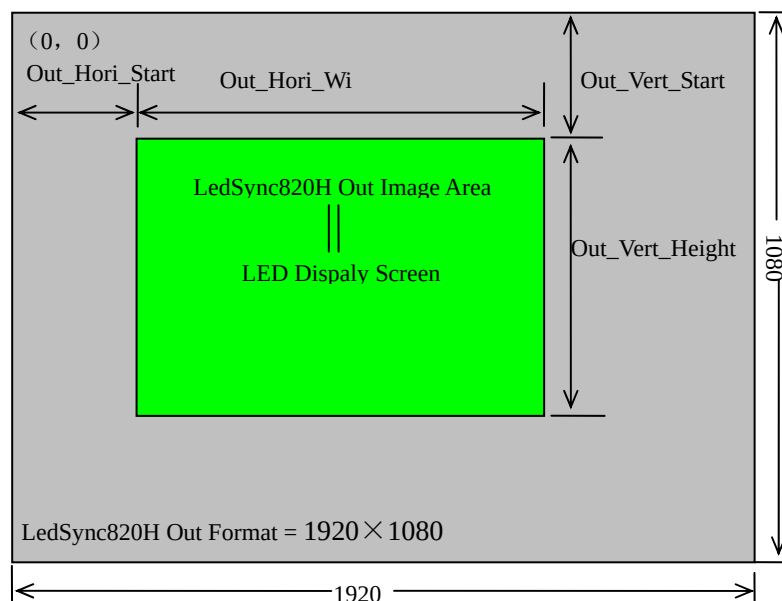
In this item, turn the knob to select either of them, then press the knob to save it and make it valid.

For example, if you select “**1280×1024_60**”, it means that the output definition of LedSync820H has been set as 1280×1024, and vertical refresh rate is 60Hz.

Please select the output definition equal to or greater than the actual definition of LED screen.

Items 3~6: “**Output image setup**”

The actual definition of LED can be any value, so we should set LedSync820H to make it output an image with the same definitions as that of the LED, so that the LED could display a full image. See figure below:



As above figure shows: the size and location of the images in

LedSync820H output window for the LED display are defined by the following 4 groups of parameters:

Item No.	Parameters
3	<i>Out_Hori_Width</i>
4	<i>Out_Hori_Start</i>
5	<i>Out_Vert_Height</i>
6	<i>Out_Vert_Start</i>

Notes: user can change current parameter settings by rotating the knob. The speed at which you rotate the knob decides the step value of the adjustment. The location and size of the output image will be previewed in the white box while you are making the adjustment, then you can press the knob to save and validate the settings you made.

4. Situration/ Sharpness

LedSync820H supports customized color Saturation and Sharpness settings. For details see table below:

Item No.	Description	Definition
7	<i>Saturation</i>	Range: 0~100, default value: 50
8	<i>Sharpness</i>	Option is “Sharp” or “Normal”, default value: Normal

Caution: (1). In order to ensure output images in complete gray, the output parameters are usually set as default values !

(2). The color parameters only apply to V1、V2 and HDMI signals.

5. Audio configurations

LedSync820H supports 3-channel dual-track audio switching. In the three channels, 1 channel is DVI/HDMI(only for HDMI input), the other 2 channels are AD1, AD2 external input audio. AD1 and AD2 can be respectively allocated to corresponding audio input of any input, and will be switched with the change of video input signals in synchrony.

If DVI/HDMI is configured as external input audio, when audio signal is switched to DVI/HDMI, external audio will be chosen as input signals, otherwise the audio signals contained in DVI/HDMI signals (only for HDMI input) will be chosen as input signals.

Item No.	Description	Definition
9	Audio1 Config	Audio configuration option for AD1 port
10	Audio2 Config	Audio configuration option for AD2 port

Notes: AD1, AD2 can't be allocated to the video input signals in the same channel!

6.PIP Setup

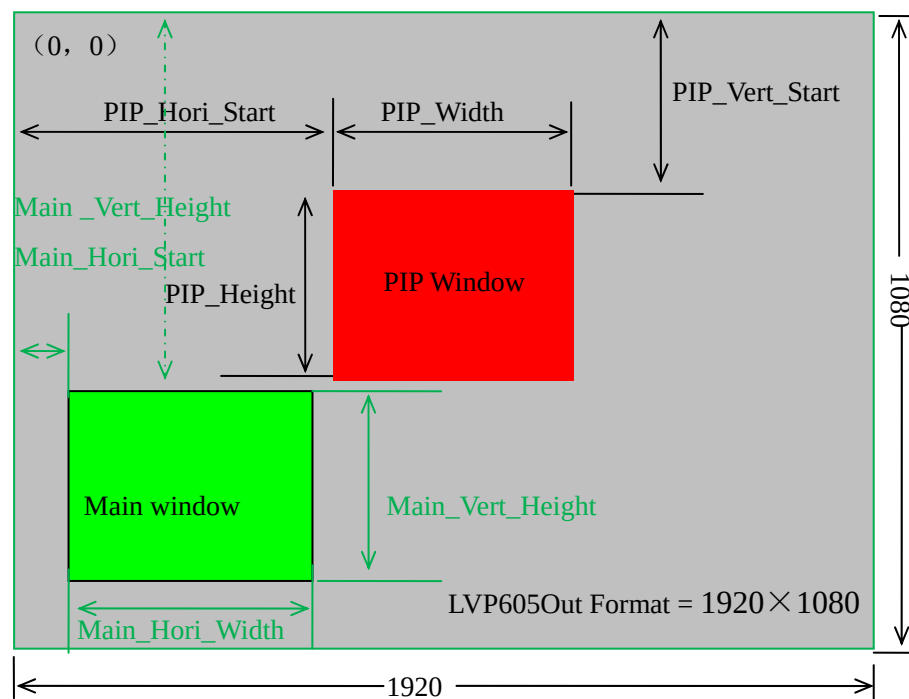


Figure 5

As above figure shows: the size and location of the images in **LedSync820H background and PIP** output window for the LED display are defined by the following 8 groups of parameters:

Item	Description
11	Main_Hori_Width
12	Main_Hori_Start
13	Main_Vert_Height
14	Main_Vert_Start
15	PIP_Hori_Width

16	PIP _ Hori _ Start
17	PIP _ Vert _ Height
18	PIP _ Vert _ Start

Operating procedures:

Switch adjustment items: press " ↑ " and " ↓ " to switch current adjustment items.

Change output parameters: user can change current parameter settings by rotating the knob. The speed at which you rotate the knob decides the step value of the adjustment. The locations of the background and PIP will be previewed respectively in the white rectangle and blue rectangle while you are making the adjustment, then you can press the knob to save and validate the settings you made.

7. Communication setup

Upper Controller can operate and control LedSync820H via RS232 or USB port. This item is used to choose the communication port as RS232 or USB .

Item	Description
19	Control Method

8. Factory district setup

The following are factory district setups, users are recommended to make these setups under the guidance of manufacturer's technicians, any improper setting or operation may result in abnormal happening to the processor.

Item 20: "ADC Calibration"

After inputting a analog signal to the video processor whose white balance has not been calibrated, the picture on the display may appear some bad phenomena, such as color cast, extreme-darkness. **LedSync820H** can solve the above problems by automatically calibrating white balance based on the input analog signals (**CVBS**、**VGA**) . Operating procedures:

Switch to the corresponding analog input signal, enter Item No. 19 "**Control Method**" after the processor detects input signals and

exports the signals to the display, press “V1” for 5 times to enter the Item 20 “**ADC Calibration**”, press knob to calibrate white balance.

Caution: The white balance of all video processors has been calibrated using standard signals in the factory, please don't set this item unless necessary!

Item 21: “**Bias**”

In order to decrease the noise on gray scale display, the LED display system usually removes the lower gray scale one of all input signals, which will cause the lose of the video information, especially in dark scene ,such as night view.

LedSync820H can improve problems as follow mentioned by adjusting the “ **Bias**”, whose limit ranging from 0 to 100. When losing the signal of dark scene, you can restore the drop-out information to the LED display by increasing the value.

Normally in order to keep the completeness of output signals, the standard value is set as **50!**

Item 22: “**De interlace**”

When **CVBS /HDMI** signals are interlace input formats (e.g.: 1080i) and used as PIP, due to limits of the processor, tremble may take place, it can be dispelled by setting the option “**De interlace**”. Operating procedures:

enter Item No. 19 “**Control Method**”, press “V1” for 5 times, then press “ ↑ ” to shift to Item 22 “**De interlace**”, turn knob to select “ON”, and press knob to make it valid.

Item 23: “**Device Init**”

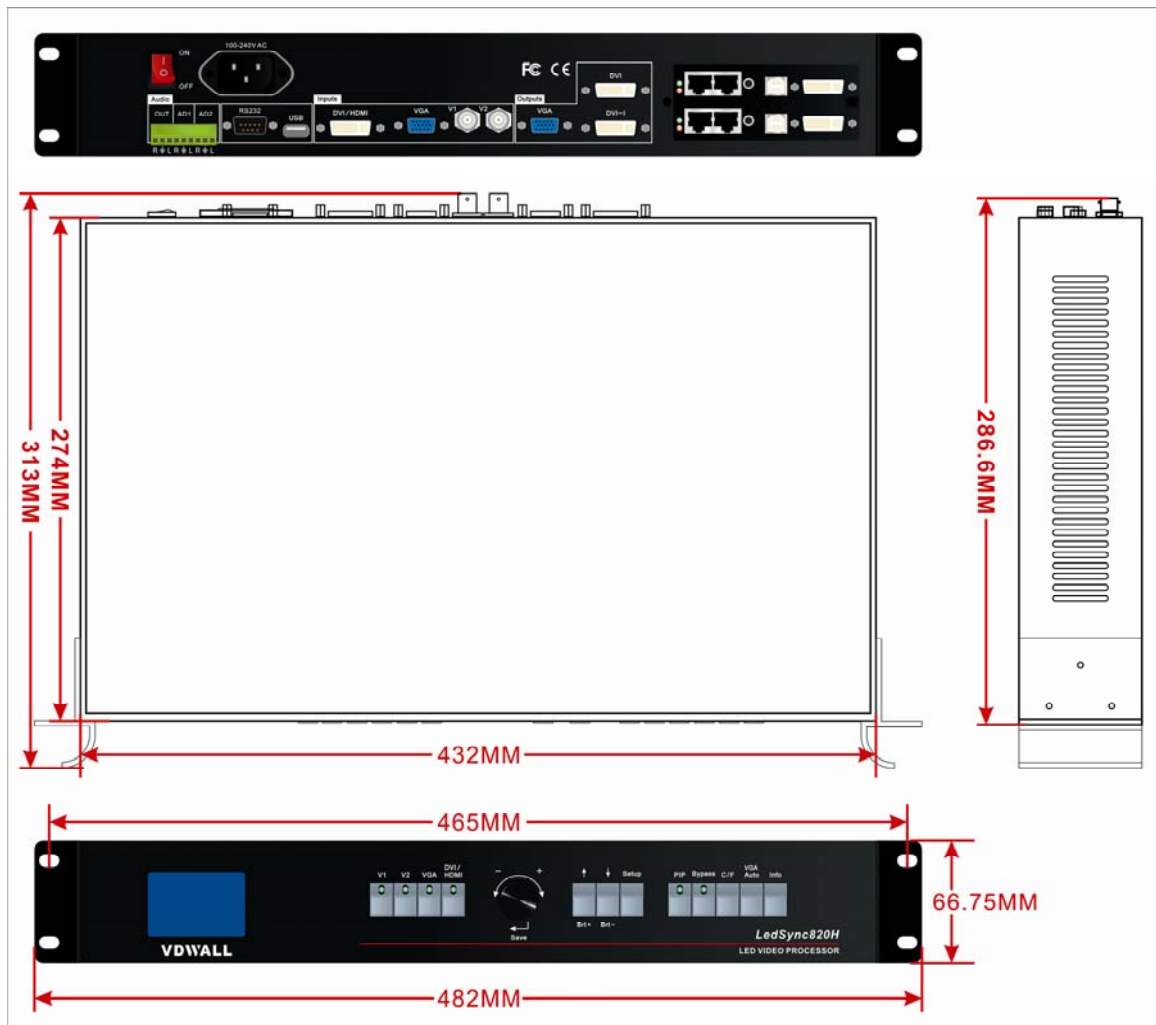
After entering item No. 19“**Control Method**”, press “V1” for 5 times, then press “ ↑ ” to shift to Item 23: “**Device Init**”, turn knob to select “Yes”, then press knob to reset the factory settings, the moment the system will remind you “**Please restart.**”, just follow the instruction.

VI. Specifications

Inputs	
Nums/Type	2×Composite 1×VGA (RGBHV) 1×DVI (HDMI) (1.3a with HDCP)

Video system	PAL/NTSC	
Composite Video Scope/Impedance	1V (p_p) / 75Ω	
VGA Format	PC (VESA)	≤2048x1152 @60Hz
VGA Scope/Impedance	R、G、B = 0.7 V (p_p) / 75Ω	
DVI /HDMI 1.3 Format (HDCP)	SD/HD (CEA-861)	≤1920x1080P @60Hz
	PC (VESA)	≤2048x1152 @60Hz
AUDIO Scope/Impedance	2.0Vp-p/10KΩ	
Input Connectors	VGA: 15pin D_Sub(Female) DVI: 24+1 DVI_D Composite: BNC	
Outputs		
Nums/Type	1×VGA (RGBHV) 2×DVI	
VGA/DVI Format	1024×768@60Hz/75Hz 1280×1024@60Hz/75Hz 1600×1200@60Hz 1920×1080p@50Hz/60Hz 1366×768@60Hz 1440×900@60Hz	
VGA Scope/Impedance	R、G、B = 0.7 V (p_p) / 75Ω	
Output Connectors	VGA OUT: 15pin D_Sub(Female) DVI OUT1: 24+5 DVI_I DVI OUT2: 24+1 DVI_D	
Others		
Control	Panel Button/knob,RS232/USB,	
Power	100-240VAC 35W 50/60Hz	
Operating Temp	5-40 ℃	
Humidity	15-85%	
Dimensions (Package)	145 mm (height) × 370mm (width) × 535mm (length)	
Weight (G.W.)	5.0 Kg	
Weight (N.W.)	3.2Kg	

Dimensions:



VII. Contact infos

Email: sale@visuallumen.com

Tel: +86-755-23412909

WhatsApp: +86-13802700271

Skype: VISUALLUMEN

Web: www.visuallumen.com